

SCIENCE & GOVERNMENT REPORT

13th Year of Publication

The Independent Bulletin of Science Policy

Volume XIII, Number 20

P.O. Box 6226A, Washington, D.C. 20015

December 1, 1983

Foreign Aid Research

Development Agency Puts Emphasis on R&D

As Senior Assistant Administrator for Science and Technology, the fourth-ranking post in the US Agency for International Development, Nyle C. Brady presides over the large but rarely heard of research enterprise built into the foreign aid program. With a "core" budget of \$270 million this year, plus use of funds budgeted directly to missions abroad, AID remains the world's largest single source of funding for research on economic development. Brady, formerly Professor of Agronomy at Cornell, came to AID in 1981 after eight years as Director General of the International Rice Institute in the Philippines. He conversed November 22 with SGR. Following are excerpts, edited by SGR for brevity and clarity.—DSG

SGR. What policy differences has the Reagan Administration brought to science and technology activities in AID?

Brady. It's giving more attention to science and technology than has been the case in the past. The head of AID asked me to come in and take this job. I believe I'm the first scientist, at least in recent years, to hold this post. The technical people in the agency have a greater voice in determining what goes on. We have

Reagan's Science Adviser Hires Some New Help—Page 5

organized what we call sector councils, where the top technical people in each of the regional bureaus, central bureaus and bureau for policy and program coordination get together. These are agriculturalists, specialists in population, energy, health, natural resources, human resources. You can see a difference in the kinds of programs that are being promoted.

SGR. What are the differences?

Brady. We've set up research priorities, not just in the US with our research contractors, but, more particularly, with the national research programs overseas. Priorities have been set in agriculture, biomedical research, and fuel wood research. We're now working with regional bureaus and country missions to clearly establish specific projects that will be carried out in these missions with the help and coordination of the regional bureaus and the Science and Technology Bureau.

SGR. In terms of numbers, what's happened with technical professionals in the agency?

Brady. The number has not gone up, because the number of people in the agency as a whole has gone down in the current Administration. But the number of technical people has gone down at a smaller rate than those of the non-technical people. There's also a mechanism that we're using to bring to the agency university professors and staff in a program that we call the Joint Career Corps. We have established 25 positions that will be filled by university professors who agree, as does their university, that they will join this Corps, which will require that they spend one-third of their professional time working as a de facto member of AID staff, and two-thirds of their time in the university. They will come to work with us overseas for two years, and go back to their university for four years, and then be available to work with us again. It's a career appointment.
(Continued on page 2)

In Brief

Scientific exchanges administered by the National Academy of Sciences and its Soviet and Eastern European counterparts have managed to survive the deepening Soviet-American chill. Quotas for this year and next year are pretty well filled, and the US Academy is now accepting applications for 1985. The US-USSR program provides for 50 months per year of exchanges for each country, and lesser amounts with the other nations. For additional information: NAS, Office of International Affairs, 2101 Constitution Ave. NW., Washington, DC 20418; tel. 202/334-2644.

The Pentagon's security addicts have extended their scrutiny to publicly delivered addresses by senior Defense officials. On November 15, Richard D. DeLauer, Under Secretary of Defense for Research and Engineering, gave a ho-hum speech on computer security to a conference near Washington. The text carried a stamp: "Cleared for Open Publication, Nov. 8, 1983, Directorate for Freedom of Information and Security Review (OASD-PA [Office of Assistant Secretary of Defense-Public Affairs]) Department of Defense."

Asked about an occasionally troublesome superior at one of the capital's leading scientific institutions, a staff member told SGR, "I don't rattle his cage, he doesn't rattle mine."

...Establishing Closer Ties with Universities

(Continued from page 1)

ment. We say to the university, "We basically will guarantee one-third of this person's salary."

SGR. *How many are in the program?*

Brady. Six of the 25 have already been signed up. And most of them are already overseas. One in India, one in Egypt, one scheduled to go to Indonesia, one to Pakistan. They can be in any field. There are economists among them. More are in agriculture than any other field. We have them in forestry, in the environment, energy and natural resources. The determination of the disciplines involved is by the missions [of AID abroad]. They request and then we turn to the universities and ask if any of you are willing to fill this request. The program involves a three-way agreement, between the professor, the university, and AID. We have a signing ceremony and we try to do it at a time when one of the members of Congress can witness it, so that they are aware of what's going on. I think those technical personnel from the universities will have a remarkable influence on AID staff. We are also using this mechanism for what we call reverse IPA [Inter-governmental Personnel Act]. A much smaller number—up to five this year—where AID officers go to a university and serve as a de facto staff member of a university, as acting professors or in other capacities. That's started and the first one is at the University of Idaho now and two other requests are on my desk that I'm trying to work through the system.

Budget Changes

SGR. *What's been the budget history over the past three years?*

Brady. The budget history for the central bureau—that is for science and technology—has gone up at about the same rate as before [from \$250 million in fiscal 1981 to \$270 million in 1984]. There's been no shift of resources in this direction. However, the proportion of the mission programs going into science and technology is going up, but that hasn't happened yet, since the planning process runs two years ahead. India is an example of the places where there has been significant change. We have worked with the Indians in

AID's Research Advisers

Traditionally large and with limited scope, AID's Research Advisory Committee has been pared by Nyle Brady to about half of its former size and encouraged to range over the agency's science and technology activities. Members are:

■
Daniel Aldrich Jr., (Chairman), Chancellor, UC Irvine
John D. Axtell, Professor of Genetics, Purdue
Arthur R. Baldwin, past Vice President, Cargill, Inc.
Emery Castle, President, Resources for the Future
Jewell P. Cobb, President, California State University
Rita Colwell, Professor of Microbiology, University of Maryland
Arnold Harberger, Department of Economics, University of Chicago
Donald A. Henderson, Dean, Johns Hopkins School of Hygiene and Public Health
Wayman P. Mauldin, Senior Scientist, Rockefeller Foundation
Vernon Ruttan, Professor, Department of Agricultural and Applied Economics, University of Minnesota
Norman Uphoff, Center for International Studies, Cornell University

developing what we call the 10-year science and technology program. Of our portfolio for working with the Indians, we would expect to move from something like seven or eight percent of our program that's science and technology oriented up, maybe over three or four years, to 30-35 percent. As an example, there's an agricultural research project of approximately \$20 million over four or five years. That's specifically for agricultural research. There are other components of research that may be part of a package that's, let's say, 80 percent something else, with the remaining 20 percent for research. There are what's called social forestry programs in India, where much of the funds would be used to help reestablish forest areas, but 20 percent of it would be used for actual field trials and research work. So, you have research being handled in research projects and as research components of other activities. We also have a project in Thailand, where, incidentally, we're

(Continued on page 3)

©Science & Government Report, Inc., 1983

ISSN 0048-9581

Editor and Publisher
Daniel S. Greenberg

Associate Publisher
Wanda J. Reif

Circulation Manager
Margaret Lee

Contributing Correspondents

Christopher Joyce (Washington); Francois Segui (Paris); Ros Herman (London)

Independently published by *Science & Government Report, Inc.*, twice monthly, except in January, July & August. Annual subscription: Institutions, \$144.00 (two years, \$255.00). Information about bulk and individual rates upon request. Editorial offices at 3736 Kanawha St. Nw., Washington, DC 20015. Tel. (202) 244-4135. Second-class postage at Washington, DC. Please address all subscription correspondence to Box 6226A, Northwest Station, Washington, DC 20015. Reproduction without permission is prohibited. SGR is available on Xerox University Microfilms. Claims for missing back issues will be filled without charge if made within six months of publication date.

...Abortion Ban Has Effects on Research

(Continued from page 2)

putting a Joint Career Corps appointee, the Dean of the College of Agriculture at Oregon State University. His primary responsibility will be helping the Thais and our AID office there to develop a science-oriented program.

SGR. *Then this administration has had no adverse effect on AID's science and technology program?*

Brady. It's not been cut. I see no evidence that it will be. Any organization can always make use of more money. But I have no complaints, in terms of the support relative to other programs. The budget is actually difficult to describe. There's a \$270-million central budget, which includes, in addition to what you might call the research-oriented components, some service-delivery components relating to health-service delivery, family planning. Out in the missions, we don't have an all-research budget; we have research components. But you probably have something on the order of another \$100 million out in the field. I hope to know better in a year, because we will be field testing a system of classification of our projects. If there's a research component, we will be able to say not only how much but what it is we're working on. I don't think there's any question that we've gained ground. I think the attitude, not only of the technical people, but also of the administrators, toward research, toward science and technology, has changed in a positive way.

Collaborative Programs

SGR. *Does any of your research take place on-campus in American universities?*

Brady. Oh, yes. Most of the very promising work in malaria research was done in this country. A lot of our agricultural research is carried out by US universities collaborating with comparable institutions—universities or ministries of agriculture—overseas in the collaborative research support. To clearly identify that there is mutual benefit in this collaborative research, universities have to put some of their own money on a matching basis. The research done in this country may relate to chemical analyses of tropical soils, beans and cowpeas—a certain amount of the crossing may be done here and then the field screening could be done abroad. In the area of agriculture, we must have 25 universities in each of these collaborative programs.

Family Planning

SGR. *Have you experienced any political chill on family-planning research?*

Brady. There are differences of opinion on family planning. It does affect us. There are strong opinions on the question of abortion. This agency has absolute restrictions on abortion—we do not support any abortion activity, we don't even support research that could

be construed to be related to abortion.

SGR. *Did that precede your arrival here?*

Brady. It preceded my arrival, but it did not precede the arrival of Mr. [Peter] McPherson [Administrator of AID]. Even though the constraint on action programs—putting money in abortion—had been there before, he himself, even before Congress told him to do it, put the constraints on [abortion-related] research. There's a little bit of a spillover because of this very strong feeling on abortion that may also influence family planning generally. If we get into family planning generally, we find differences between those who maintain we should not use any except natural family planning mechanisms and those that say let's make use of whatever has been approved by the Food and Drug Administration. We get these pressures from both sides. We have increased the Agency's research and training efforts in the natural family planning area. There was relatively little work being done there when this Administration started. We've increased up to something around \$2.5 million and within the coming year, we hope to get it up to at least \$5 million. This technique is not only poorly tried out, but education is needed to make it work.

SGR. *In what countries will this be done?*

Brady. Some of the work is already being done in Latin American countries. We're working very carefully to try to do this in cooperation with organizations that have sympathy for this. I believe some programs are being carried out in cooperation with the Catholic Church and organizations that have been stimulated by the Catholic Church. We want to be sure that we are, in fact, utilizing the techniques that are socially accepted by such groups.

Not a Basic Research Organization

SGR. *What has AID been doing about research in artificial birth control?*

Brady. There is some research work still going on, supported by AID, on such things as contraceptives that would not require daily taking of pills—chemicals that might be implanted.

SGR. *Has that work increased?*

Brady. No, it's continuing at about the same rate. We have not increased research there. We have taken the attitude that AID is not a basic research organization. What we have generally done is that when basic research has been done that indicates that a chemical or a procedure has some potential, then we will maybe cooperate with the research organization to work with them, with approved procedures of the Food and Drug Administration, to field test and try these out to see

(Continued on page 4)

...Networks to Promote Research Collaboration

(Continued from page 3)

whether, in fact, they are effective and to be certain that there are no side effects. We do cooperate, but we do not do basic research work on physiology.

SGR. India and the US agreed earlier this year to increase scientific and technical cooperation in development and other areas.

Brady. We agreed to set up a joint science and technology program. This agency is taking direct responsibility in trying to coordinate work in agriculture and forestry. We're also cooperating with Health and Human Services on the biomedical side. The program has the two kinds of problems of anything that's new. It takes a little while to get the ideas of the two countries meshed and specific projects decided upon. It also takes money, and that means some reallocation or, in some cases, a little extra money.

Slow Pace of Change

SGR. What have been some disappointments?

Brady. This is my first experience in working in AID Washington. I can't help but be impressed how long it takes to get new ideas fully threshed out and implemented. I've been accustomed either at a university or at a research institute, particularly the latter, where, when a decision was made that something needed to be done—well, we found the new disease or the new insect that hit us, and within a week we had plants being grown, we had an interdisciplinary team banging away for an answer. And within six months we knew it. And we were screening our 60,000 rice varieties to find some that would be resistant to it. I've been accustomed to quick action, and that just doesn't take place. AID is basically a bottom-up agency, and that's as it should be. The missions out in the countries are the ones that basically determine what needs to be done. All we try to do is provide mechanisms by means of which these countries can get together to decide on some common elements and then put some research monies into it. That has been a disappointment. It has taken much longer for some of the things to get going than I had expected.

SGR. What in particular?

Brady. We've been working to establish networks of countries that will cooperate and exchange information on research on similar problems. I would like to see half a dozen of those in operation right now. As it is, it will be next year or the year after. One that we've initiated and gotten started is on elementary education in Africa, where we're trying to begin with three countries, ultimately six. We're working together on innovative techniques for education. We're working on the assumption that with the rate of population increase in

these countries, they simply cannot afford the traditional one teacher, 30 student ratio, and we've got to try to help them come up with techniques by means of which they can be more efficient if they have one teacher and 30 students; or in a situation where they have one teacher and 60 students. The concept that we've already tried out elsewhere is of teachers selecting three or four bright youngsters to become tutors, to become subteachers, working with the kids.

Focus on Africa

SGR. Is this to be a new area of interest for AID?

Brady. That definitely is a new area. In the past, there was some reluctance to get into elementary education. There was a feeling that we'll help them at the university level. That decision was quite appropriate in most countries, but in Africa, particularly southwest of the Sahara, the human-resource development level is simply not in accord with their needs. The area is the only major area in the world that has actually gone backwards in its ability to feed itself. There are two primary factors: One is that the policies have been such that it doesn't pay the farmer to do the right thing. He makes more money if he quits farming and goes to the city. That simply has to have attention, and we're trying to give it. Second is that there has been an assumption made by the Africans and the donors, as well, that the technology that was developed in Latin America and Asia can just be brought in and transferred, and you take off from there. This simply cannot be. You have different insects and disease problems. You have differences in soil and climate.

SGR. How are these problems reflected in your research activities?

Brady. Africa has received more attention from the technical people than any other region. We have developed a memorandum of understanding with five universities, and there will be others later, that gives a longterm, formal relationship with these institutions. One of the criteria we use in selecting these universities is their current and potential interest in working with Africa.

OTA Fills Health, Science Post

Roger C. Herdman, Vice President of Memorial Sloan-Kettering Cancer Center, NY, and former Director of Public Health for New York State, has been appointed head of the Health and Life Sciences Division of the Congressional Office of Technology Assessment. He succeeds David Banta, who left to become Deputy Director of the Pan American Health Organization.

Keyworth Appoints Five Senior Assistants

White House Science Adviser George A. Keyworth II has restocked and reorganized the depleted upper echelons of his office with a batch appointment of a Deputy Director and five Assistant Directors. The recruits, who were all on board when the appointments were announced last week, fill posts that emptied out over the past year as Keyworth's original crew, for individual reasons, trickled off to other jobs.

The appointments, all to the staff of the White House Office of Science and Technology Policy, are as follows:

- Deputy Director: John P. McTague, who comes from the Brookhaven National Laboratory, where he was Chairman of the National Synchrotron Light Source Department since 1982. He formerly was a Professor of Chemistry at UCLA. McTague succeeds Ronald B. Frankum, a non-scientist who came from the political side of the White House to OSTP, and did not flourish there. Frankum has gone into business as a communications consultant.

McTague's synchrotron expertise matches well with Keyworth's own handmade plans for a vast materials research center, with a synchrotron light source as its centerpiece, at the Lawrence Berkeley Laboratory, California. Congress balked at Keyworth's fast shuffle in behalf of that venture (SGR Vol. XIII, No. 10), and, to the Science Adviser's chagrin, a review panel that was intended to provide legitimacy, raised questions about the scale and organization of the proposed lab.

- Assistant Director for General Science: Ralph M. DeVries, who formerly headed the Nuclear Physics Program at the Los Alamos National Laboratory. Prior to that, he was on the physics faculty at the University of Rochester. DeVries succeeds Douglas Pewitt, who acquired a much-exaggerated reputation as OSTP's *eminence grise* before going off to industry a few months ago.

- Assistant Director for Space Science and Technology: Richard G. Johnson, who, since 1956, had been with the Lockheed Palo Alto Research Laboratory, where he managed the Space Sciences Laboratory for 10 years. Most recently, he was Senior Science Adviser to the Director of Research. Johnson's OSTP post appears to be a sliced-off version of what was formerly the assistant directorship for National Security and Space. That may reflect Keyworth's interest in the "Star Wars" missile-defense controversy, as well as the intensifying debate over what next for NASA.

- Assistant Director for Institutional Relations and Acting Director for Life Sciences: James G. Ling, who came to OSTP as a charter Keyworth appointee after a 21-year Air Force career and management posts with the

MITRE Corp. and the Department of Energy. Ling, who held the title of senior policy analyst in Pewitt's office, will be responsible—under Institutional Relations—for issues concerning universities. The "acting" designation is said to reflect the possibility of a separate post for the life sciences, an area in which OSTP has been rather shaky since the departure of a Carter holdover, Denis Prager.

- Assistant Director for Energy, Natural Resources, and International Affairs: Wallace R. Kornack, an engineer who spent most of his career with the Department of Energy and its nuclear predecessors. His jurisdiction includes the international collaborative R&D efforts that were endorsed by the Versailles and Williamsburg economic summits. Kornack succeeds John D. Marcum, who has taken a post at the Paris-based Organization for Economic Cooperation and Development.

- Assistant Director for Defense Technology and Systems: Maurice A. Roesch III, an active duty Marine colonel who received a PhD in systems management in 1979 from the University of Virginia, where he was teaching Naval Science at the time of his OSTP appointment. Keyworth's announcement said Roesch "has extensive experience in combat engineering, systems acquisition, intelligence and operations analysis." The office he heads is a new creation; its closest predecessor, National Security and Space, is no longer in the list.

What's notable about the appointments is the absence of anyone coming directly from academe—one of the recruiting grounds for the White House science office in past administrations. One reason may be that Keyworth himself, like five of his six new appointees, came from a government post (he spent his career at the Los Alamos National Laboratory). Another reason is that it's difficult to lure senior academics to Washington late in a presidential term. It's not likely that pay is the problem. For all the grouching about government scales, they're far ahead of the going rate for all but a thin upper slice of academic jobs. Salaries for the new OSTP appointees are in the mid-\$60,000 range.

Medical Enrollments Increase

Despite the arrival of the long-predicted doctor glut, medical school enrollments hit a record high this year, 67,327, according to the Association of American Medical Colleges. The freshman class was down a mere 0.5 percent, while applicants per slot dropped from 2.2 to 2.1. The increased enrollment is attributed to large classes from prior years, a low attrition rate, and a switch from three- to four-year programs by four medical schools.

NIH Head Cites Need for Major Budget Growth

A mainly optimistic report on the fiscal and political condition of the nation's biomedical research enterprise was delivered last month by James B. Wyngaarden, Director of the National Institutes of Health.

Justifiably buoyed by the recent resumption of that oldtime Congressional support for healthy growth in the NIH budget—up by over \$300 million in the face of Administration opposition—Wyngaarden listed needs that might require “perhaps a doubling of the NIH budget by 1990...” That would raise the total to \$8 billion.

His audience, for what could stand for a State of the NIH Message, was the annual meeting of NIH's leading clientele, the Association of American Medical Colleges.

Perhaps most notable, but not surprising given the sensitivities of that audience, was Wyngaarden's avoidance of the nettlesome issue of indirect costs on NIH grants. Shortly after taking office in May 1982, he often expressed concern about the rapid growth of overhead expenditures. Academe didn't care for that, and efficiently informed Congress of its preference for keeping the money coming; Congress, in turn, overrode the Administration's efforts to trim the payments, and it now appears that a dampening of indirect costs is politically out of reach, and therefore not worth scrapping about.

Wyngaarden did return to one previous theme—concern about the overall effects of NIH's commitment to “stabilize” the biomedical-research economy by providing at least 5000 new and continuing research grants per year. As he has noted in the past, the commitment, which was devised during the Carter Administration, has eaten into funds for other programs. But he didn't suggest an abandonment of the stabilization goal, and, thus, in effect, was saying that the remedy for NIH's afflictions is more money rather than new policies for sharing scarcity.

“Stated in the simplest possible terms,” he said, “we need to assure adequate levels of support for the entire research enterprise if we are to preserve the momentum of discovery.” This embraces, he said, “maximum adequate funding for centers, for contracts, for intramural research and training, as well as for research grants.” But, because of recent budget stringencies, he continued, NIH has found it necessary to trim the size of awards and cut back to funding only 39 percent of approved projects. In 1982—the most recent year for which complete figures are available—the percent of first-time grantees hit a decade low of 8 percent.

The “optimal level for progress,” the NIH Director said, would be funding of 45-50 percent of approved applications. And, in a style uncharacteristic of Reagan

Administration appointees, Wyngaarden went on to observe that “In the context of the federal budget, the sums needed are not large. Last December, I expressed...my belief that to achieve such a goal, we would need an additional \$300-400 million per year. It is encouraging that the increase for 1984 falls well within that projection.

“But,” Wyngaarden added, “a projection based on a 50-percent award rate, essentially full funding of grants, and maintenance of balance among the essential mechanisms for research support would require much larger sums, perhaps a doubling of the NIH budget by 1990, even if a modest rate of inflation is assumed.”

Among the other major points in his address:

- NIH has joined with the National Science Foundation in a study of the need for large-scale research instruments. It is estimated, that over the next five years, a total of \$100 million will be required, in addition to funds for small instruments included in research grants.

- There is obvious need for funds for building and renovating laboratory facilities, for which NIH has not provided support for many years. However, “Rather than calling for any new major expansion, the realistic aim of any new federal construction program should probably be less ambitious. It should, however, include new construction to replace outmoded facilities, to relieve overcrowding, and to accommodate changing research requirements, including facilities for dealing with toxic wastes, facilities to house laboratory animals, and for major renovation and repair of inferior facilities. There is a dearth of good information on construction needs, and a study similar to that being conducted on instrumentation deficits is seriously needed. It is encouraging to note,” Wyngaarden stated, “that the Congress has recognized that universities and other institutions of higher learning are reaching a point where they will not be able to participate fully in our cooperative research endeavor without assistance.”

- Opposition to a separate Arthritis Institute does not portend abolition of the existing categorical institutes.

- NIH does not desire a larger role in relations between universities and industry. Rather than “some kind of active part in the institution of these new relationships...we believe it preferable that the new forms of joint endeavor continue to evolve as they have been with government playing a facilitative role.”

- Finally, despite the growth of industrial support for research in universities, Wyngaarden stated, “I believe it safe to predict that the government will continue as the principal source of funding for basic research.”

To the Editor: Indirect Costs

I cannot understand the conclusions you attribute to the forthcoming General Accounting Office study of NIH grants [SGR Vol. XIII, No. 18, which reported GAO findings of infrequent audits and poor documentation at some universities]. At Stanford University, at least, we are audited into the ground!

After years of battling my own administration over indirect cost rates, I've come to believe that Stanford's handling of indirect costs on sponsored research projects is basically honest. What's fatally wrong with the overhead system is instead its inconsistency. The University explicitly assesses indirect costs on the expenditure of outside sponsored funds, and explicitly hides the indirect costs when it spends its own tuition and endowment income (though it does *pay* those indirect costs, behind the scenes).

I suggest that the validity of indirect costs will be accepted (albeit reluctantly) by university researchers, by Federal agency sponsors, and by Congress, when and only when universities *explicitly impose essentially the same overhead rate on every dollar spent on campus, regardless of its source.*

At Stanford, for example, the administration would have to take those University funds now spent covering the hidden indirect costs for the English Department, explicitly give them to the English Department, in the form of a 70-percent budget rise next year, and then collect these funds back as an *explicit* overhead on the English Department's activities. Departments receiving support from non-overhead-paying outside sponsors (such as foundations) would have to ask for an explicit allocation of university funds to cover indirect costs, instead of having these costs be paid in a hidden fashion, as they are now.

Only when all of us on campus are in the same boat will overhead rates slowly begin to come down—"you have to pay overhead to be really concerned about overhead."

A.E. SIEGMAN

Professor of Electrical Engineering
Stanford University

In Print

International Competitiveness in Electronics, 546 pages, by the Congressional Office of Technology Assessment, warns that foreign competition is eroding the US's technological position, and spells out options that have been suggested for slowing or reversing the trend. (\$6.50, Library of Congress Card No. 83-600-610 Superintendent of Documents, USGPO, Washington, 20402.)

In Quotes: N-Power's Ailment

The following is from an address, "Facing the Realities of a Fragmented Nuclear Power Industry," by Commissioner Victor Gilinsky, of the Nuclear Regulatory Commission, October 12, to Seabrook Project Staff, Portsmouth, NH:

Nothing, in fact, explains so much about nuclear power in the US as that we have 58 nuclear utilities. Of these, 29 will have just one reactor, 14 will have two, and probably only three utilities will have 5 or more—putting them in the league of, say, Taiwan Power, or Korea Electric Power. I see this fragmentation of the nuclear utilities as the fundamental weakness of nuclear power in the United States.

The situation also makes it extremely difficult to regulate the safety of the industry. It is only a slight exaggeration to say that we get nearly 60 different solutions to every safety problem. This approach is the very opposite of the standardization we need and talk about so much. We cannot afford this much diversity, especially with such a demanding technology, and certainly not with 125 reactors. The NRC is now faced with too many different complicated safety analyses to keep track of, and we do not have enough resources collectively to do a good job.

SGR Binders Available

Embossed looseleaf binders that can accommodate two annual volumes of *Science & Government Report* are available for \$6.95 each. Also available are copies of Daniel S. Greenberg's collection of *The Grant Swinger Papers*, (32 pages) \$4.95 each. Address: SGR, PO Box 6226, Washington, DC 20015. Please include payment with order.

Subscription Form

Science & Government Report
Northwest Station
Box 6226A
Washington, D.C. 20015

- ☐ Renew my subscription; ☐ Check enclosed
☐ Enter my subscription; ☐ Please bill

Institutional subscribers: one year, \$144.00 ☐

two years, \$255.00 ☐

(Overseas airmail, \$25.00 per year additional.)

Name

Address

Zip

Academe's Big 10 in Federal R&D Receipts

Which university receives the most federal R&D funds?

Johns Hopkins regularly tops the list, and shows up for \$363 million in the National Science Foundation's latest government-wide compilation, which is for fiscal 1981. But the figure is deceptive, since it includes some \$280 million for the Applied Physics Laboratory, which Hopkins, in Baltimore, manages for the Navy, in suburban Washington. APL didn't enter the accounts until 1978, when Hopkins incorporated it, at least administratively, into the university.

Number two in the rankings is MIT, another big defense recipient, with \$146 million. Proceeding down the list, others in the top 10 are:

3. Stanford, \$106 million
4. U of Washington, \$100 million
5. UCLA, \$95 million
6. UC San Diego, \$91 million
7. Harvard, \$88 million
8. U of Wisconsin, Madison, \$87 million
9. Columbia, main division, \$83 million
10. U of Pennsylvania, \$76 million

The leading provider of the money is the Department of Health and Human Services, with over \$2 billion. In second place, and rising fast since 1981 as a financier of R&D on campus, is the Department of Defense, whose \$700 million edged out the National Science Foundation by about \$100 million.

These data and a great deal more are in NSF's annual report on federal support to academe, NSF 83-315, 240 pages, free, from Division of Science Resources Studies, 1800 G St. NW., Washington, DC 20550.

NAS Plans Policy Journal

After thinking about it for at least 25 years, the National Academy of Sciences is entering the homestretch for a yes or no decision on publication of a policy-oriented quarterly. However, a favorable decision is considered almost certain.

Tentatively titled *Issues in Science and Technology*, the planned publication is said to be modeled after *Foreign Affairs*. But before taking the plunge, the Academy is going to test the market with a mailing in January of 150,000 invitations to subscribe.

To carry out that effort, the NAS Governing Council has authorized expenditures of \$200,000. Guidance for the marketing test is being provided by Allen Hammond, the conceiver and editor of the highly successful *Science83*, published by the American Association for the Advancement of Science.

With high expectations for the test mailings, a search is underway for an editor and plans are being made to start publication in May. According to Norman Metzger, the Academy staff member who is tending the journal project, the test mailing would have to produce "an absolute disaster" to throttle publication.

The idea of an Academy policy journal has been around for a long time, but didn't receive effective support until a couple of years ago when Frank Press became NAS President and assigned a high priority to the venture.

Science & Government Report
Northwest Station
Box 6226A
Washington, D.C. 20015

Second class postage paid
at Washington, D.C.

9999

Xerox-University Microfilms
300 N. Zeeb Rd
Ann Arbor MI 48106

